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Short Note

Social categorization as a function of priming

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Abstract

The present study investigates the effect of priming on the use of social categorizations. Using sex and race as stimulus categorizations, previous studies failed to confirm the hypothesis that priming one of the two available categorizations would enhance the use of the primed categorization relation to the not-primed categorization. As suggested by Stangor, Lynch, Duan and Glass (1992), a momentary increase in accessibility may be insufficient to further enhance the use of highly accessible categorizations like race and sex, but it may be expected that priming will increase the use of categorizations which are less habitually used in daily life. The results of the present experiment support the hypothesis that, when the stimulus categorizations are weakly accessible (university major, university town), the relative use of the previously primed categorizations does indeed increase, compared to the alternative, not-primed, categorization.

INTRODUCTION

Theoretically, it may be argued that the use of social categorizations in information processing may be affected by subtle cues in the prior context. Priming of category labels can be considered as a way to enhance the recency of activation and hence the situational accessibility of a social categorization by means of contextual cues (van Knippenberg, van Twuyver and Pepels, 1994). It is assumed that recent activation results in increased accessibility of the primed categorization, as a consequence of which it affects the use of the primed categorization in a subsequent task.

Research on priming of adjectives yielded assimilations: without being conscious of the influence of the prime, subjects tend to characterize stimulus persons in a way

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consistent with the previously primed construct (e.g. Higgins and King, 1981; Wyer and Srull, 1981). However, until now priming research has focused almost exclusively on effects of priming on the use of traits to characterize individual persons. As argued above, one might also predict priming effects on the use of social categorizations.

An experimental paradigm considered useful to study categorization processes in social situations is the 'Who-said-what' or 'name-confusion' paradigm introduced by Taylor (Taylor, Fiske, Etcoff and Ruderman, 1978). Taylor *et al.* asked subjects to listen to a tape-recording of statements made by six participants in a group discussion, each statement being paired with a photograph of the (black or white, or male or female) speaker. After the presentation of the stimulus series, the subjects were again presented with the statements and were asked to indicate for each statement, which participant was the source of this particular statement. Categorization was indicated by the extent to which the number of confusions subjects made between sources from the same category exceeded the number of confusions between sources from different categories. Using this paradigm, two experiments by Stangor *et al.* (1992, study 1 and 2) investigated the effect of priming of category labels on category use. Presenting sex and race as 'crossed categorizations' (see Arcuri, 1982), it was hypothesized that priming would result in increased use of the primed categorization compared to the alternative categorization. However, in neither of these studies was the expected increase in the relative use of the primed categorization observed. Using the same experimental paradigm, van Twuyver and van Knippenberg (1992) studied the effect of priming either the male–female or the student–teacher classification on the relative use of the primed categorization. Also in this study priming failed to enhance the use of the categorization involved relative to the alternative categorization.

Stangor *et al.* (1992) suggested a plausible explanation for the failure to obtain categorization effects of priming. It is possible that a ceiling effect has occurred because the stimulus categorizations in the above studies are chronically accessible. That is, categorizations like sex and race are used frequently and spontaneously in all kinds of situations without being primed, so that contextual cues cannot further enhance their use. However, as Stangor *et al.* argue, although short-term contextual manipulations may be insufficient to further increase the use of categorizations that are already used very frequently, it is likely that the use of categorizations that are used less habitually in daily life, may be more easily affected by enhancing accessibility through priming.

The present experiment, therefore, investigates effects of priming on categorizations that are used less frequently and less spontaneously in daily life than race and sex, namely university major (psychology/law) and university town (Nijmegen/Amsterdam). Based on the above discussion, the following hypothesis may be formulated. We predict, using two 'weak' categorizations, that priming will lead to an increase of the use of the primed categorization relative to the use of the alternative categorization.

METHOD

Subjects

Eighty-six psychology students at the Nijmegen University (31 men, 55 women) participated as subjects in our study on a voluntary basis.

Stimulus materials

Selection of stimulus categorizations

Based on a pretest, university major and university town were selected as 'weak' categorizations. In this pretest ($N = 78$) a 'Who said what' paradigm was used. The categorizations that were studied were: student–teacher, psychology–law, Nijmegen–Amsterdam, CDA–D'66 (political parties in Holland), smokers–non-smokers and — as a standard for comparison — male–female. From these pretested social categorizations, psychology–law and Nijmegen–Amsterdam were selected (1) because they are significantly weaker than the sex-categorization (that is, the difference between within-group confusions and between-group confusions was smaller than for the sex-categorization, $F(1,35) = 9.63$, $p < 0.005$ and $F(1,35) = 17.48$, $p < 0.0001$) respectively), and (2) because between these categorizations there was no significant difference in strength ($F(1,40) = 1.33$, n.s.). Separate tests of simple effects indicated that the difference between within- and between-group errors was significant for the sex categorization ($p < 0.0001$) and non-significant for both the psychology–law and the Nijmegen–Amsterdam categorizations (both F's < 1). On the basis of the results of this pretest it can be assumed that both the psychology–law and the Nijmegen–Amsterdam categorization are indeed less accessible than the sex categorization.

'Who said what' paradigm

In the present study a name-matching task was used, based on the 'Who said what' paradigm. The general procedure in this paradigm is that subjects first observe a group discussion between stimulus persons belonging to different categories and, subsequently, have to ascribe each discussion statement to the corresponding source. The dependent variable is the number of errors made in ascribing statements to sources. The degree to which a particular categorization is used is indicated by the number of times that statements are incorrectly ascribed to a source belonging to the same category (e.g. one law student is confused with another law student), relative to the number of times that statements are incorrectly ascribed to a source belonging to a different category (e.g. a psychology student is confused with one of the law students). Categorization is assumed to have occurred to the extent that the number of within-group confusions exceeds the number of between-group confusions.

Procedure

The subjects were asked to participate in two allegedly unrelated studies. The first study involved a paper and pencil task. Half of the subjects received a version of this task in which the psychology–law classification was activated, and the other half of the subjects received a version in which the Nijmegen–Amsterdam classification was activated (see 'Priming manipulation' below). The 'second' study, in which the name-matching task was administered, followed immediately after this task.

Priming manipulation

The priming manipulation directly preceded the discussion information. For half of the subjects only the psychology–law categorization was primed while the Nijmegen–Amsterdam categorization remained unprimed ('priming psychology–law'), and for the other half of the subjects, the Nijmegen–Amsterdam categorization was primed

while the psychology–law categorization remained unprimed ('priming Nijmegen–Amsterdam'). Subjects in the 'priming psychology–law' condition received a questionnaire in which the psychology–law categorization was activated through a series of questions about psychology and law students, and subjects in the 'priming Nijmegen–Amsterdam' condition received a questionnaire in which the Nijmegen–Amsterdam classification was activated through a series of questions about students in Nijmegen and Amsterdam.

To ensure that the effects on the dependent variable are caused by the manipulation of priming, and not by 'demand-characteristics', a procedure was followed that has proved to be successful in avoiding such demand characteristics that might occur when the experimental task is consciously associated with the prime (see Wyer and Srull, 1981). The pretask, in which the classifications were primed, was introduced to the subjects as a separate study that was unrelated to the actual experiment. To further increase the credibility of the studies being unrelated, each task was administered by a different experimenter.

Because the prime is thus meant to remain unnoticed, a straightforward manipulation check for priming seems inappropriate. To check whether the subjects had indeed been unconscious of the influence of the prime while performing the name-matching task, we asked the subjects afterwards what they thought the first and the second studies were about, and whether they had believed there was a relationship between them. Because none of the subjects reported to have noticed a relation between the two studies, we may conclude that the effects reported in the 'Results' section are the result of the priming manipulation, and not of what subjects believed the experimenters expected them to do.

Name-matching task

Directly after having finished the pretask, each subject was seated behind a Macintosh computer in order to participate in the second study. Watching a written representation of a 'group discussion' on the computer screen, subjects received information about 12 stimulus persons, each of which expressed one statement concerning a category-neutral issue (i.e. possible improvements of the public transport system in Holland).

Presenting the psychology–law and the Nijmegen–Amsterdam categorizations as *crossed categorizations*, the stimulus situation in the present experiment contained two competing categorizations which were simultaneously available to classify the discussion participants in the name-matching task (see Arcuri, 1982). That is, the group memberships (psychology or law students, and students from Nijmegen or Amsterdam) of the 12 stimulus persons on each of the categorization criteria were systematically varied, such that the categorizations were uncorrelated. Crossing the two categorizations resulted in a stimulus set with three psychology students from Nijmegen, three psychology students from Amsterdam, three law students from Nijmegen, and three law students from Amsterdam. On the basis of this crossed categorization, the stimulus persons could be classified in two different ways: into six psychology students and six law students (university major), and at the same time into six students from Amsterdam and six students from Nijmegen (university town). The information about the group membership of the sources was given through verbal labels, e.g. 'John, a psychology student from Nijmegen'. To avoid sex categorizations, all stimulus persons were given male first names.

After the presentation of all 12 stimulus persons and their statements, the statements were presented again, one by one, in a different order. Now, the subjects had to match each statement with the source of that particular statement. The statements were accompanied by a list of the 12 stimulus persons, represented by a number (1–12), their first name and their group labels. For each of the statements the subjects had to indicate which of the 12 persons had made the statement. The number of errors made in ascribing the statements to the corresponding sources, was the dependent variable.

RESULTS

After having applied a correction (multiplying the number of between-group errors by 5/6) for *a priori* differences in probability to make within-group and between-group errors, the number of observed source confusions was subjected to an ANOVA with primed categorization (psychology–law, Nijmegen–Amsterdam) as a between-subjects factor, and with categorization criterion (primed, not-primed) and type of error (within-group, between-group) as within-subjects factors.

In accordance with results obtained in previous studies (e.g. Taylor *et al.*, 1978) a main effect of type of error was found, $F(1,84) = 33.30; p < 0.0001$. On average subjects made more errors within groups ($M = 5.21$) than between groups ($M = 3.79$), which indicates that the stimulus categorizations were in fact used in processing information about the stimulus persons. The central prediction of the present study is that priming the category labels of one out of two available classifications leads to an increase of the use of the primed categorization relative to the not-primed categorization. In accordance with this prediction, the interaction effect of the within-subjects factors categorization criterion × type of error was significant, $F(1,84) = 4.31; p < 0.05$. Since the three-way interaction was not significant ($F(1,84) = 2.29$; n.s.), this priming effect was not affected by the content of the prime.

Table 1 shows the mean number of within- and between-group errors for primed and not-primed categorizations. As hypothesized, primed categorizations had a stronger effect on the difference between within-category and between-category confusions ($M_{diff} = 1.99$) than the not-primed categorizations ($M_{diff} = 0.83$). In order to further interpret this effect, we first examined whether the priming manipulation has affected within-group errors, between-group errors, or both. It may be expected that priming affects both types of errors, in that it leads to an increase in the number of within-group errors and to a decrease in the number of between-group errors. Indeed, as shown in Table 1, there were more within-group errors for primed than for not-primed categorizations ($M_{diff} = 0.065$) and fewer between-group errors for primed than for not-

Table 1. The interaction effect of categorization criterion × type of error on source confusions

	Type of error		
	Within-group	Between-group	Difference score (within–between)
Categorization criterion			
Primed	5.53[a]	3.54[d]	1.99
Not-primed	4.88[b]	4.05[c]	0.83

Means with different superscripts differ significantly at $p < 0.05$.

primed categorizations ($M_{diff} = -0.51$). Tests for simple effects indicate that these differences are significant for both pairs of means.

A second way to interpret these results is to look at the difference between within- and between-group errors in primed and in not-primed conditions. If this difference is significant in the not-primed condition, this would imply that the categorizations were accessible to a certain extent, even when they were not primed, suggesting that priming has made less accessible categorizations more accessible. This would rule out an alternative possibility that the categorizations were non-accessible in the first place. Although the difference between the number of within- and between-group errors was larger for the primed than for the not-primed categorizations, separate simple effects tests indicate that this difference was significant for both primed and not-primed categorizations. Thus, we may conclude that priming has made less accessible categorizations more accessible rather than that it has made non-accessible categorizations accessible. In sum, the prediction that priming leads to an increase of the use of the primed categorization compared to the use of the alternative categorization is supported by our data.

DISCUSSION

Although it has been demonstrated that priming trait adjectives affects subsequent descriptions of the stimulus persons (Higgins and King, 1981; Wyer and Srull, 1981), previous attempts to show similar effects of priming *social categorizations* on the use of these categorizations in the name confusion paradigm have failed (Stangor *et al.*, 1992; van Twuyver and van Knippenberg, 1992). In the latter studies, very common categorizations were used, such as race and sex, which are probably among the most habitually used social categorizations and, therefore, may be argued to be *chronically accessible*, that is, these categorizations are readily available in any social situation. Stangor *et al.* suggested that priming these chronically available social categorizations may not further enhance their use because of a ceiling effect. Conversely, priming social categorizations which are less frequently used, such as university major and university town, might affect the way in which social information is categorized. Indeed, the present study shows that priming such weakly accessible social categorizations does enhance the use of the primed categorization in a subsequent social information processing task.

When questioned in the debriefing, none of the subjects seemed to have seen through the deception of unrelatedness of the priming task and the name matching task. Therefore, it seems plausible that the obtained priming effects can be ascribed to the enhanced cognitive accessibility of the primed categorizations. The recent activation of a social categorization in the priming task probably makes this categorization temporarily more accessible as a cognitive structure to be used for the organization of complex information in memory.

In sum, our findings underscore the notion that, although it is difficult to increase the use of chronically accessible categorizations through short-term contextual manipulations, categorizations that are less habitually used in daily life are much more sensitive to momentary changes in accessibility. Admittedly, the present study did not directly compare the effects of priming chronically accessible versus less accessible categorizations. Rather the conclusion that chronic accessibility mediates the effect of

priming on the use of social categorizations is, in fact, only based on an indirect comparison between the present results and results from previous studies in which priming of chronically accessible categorizations failed to enhance the use of these categorizations. Thus, future research is needed to gain a more complete understanding of the potential role of chronic accessibility in mediating the effects of priming social categorizations, by directly varying the *a priori* accessibility of the primed categorizations. Another potential limitation of the present study concerns the question how the present evidence extends to the broader context of stereotype application. For example, it may be interesting to see whether increased category use as a consequence of priming a social categorization corresponds with increased stereotyping of members of the primed categories. However, the relationship between category use as measured in a name-matching paradigm and the use of stereotypes is unclear. As shown by Miller (1986, 1988) and Taylor and Falcone (1982), the correlation between category use in a name-matching task and stereotype application is weak, and categorization of members of the stimulus categories only leads to stereotyping of those particular individuals, not to stereotyping of category members in general (i.e. to category members outside the experimental stimulus group).

Despite these limitations, our results show that a momentary activation of a less accessible categorization suffices to affect social categorization in a subsequent unrelated task. Merely due to the recency of activation, the primed categorization becomes more accessible in memory than alternative categorizations. Consequently, perceivers are more prone to use that categorization in processing information about persons, without being aware of the influence of the prime.

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